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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,303	11/07/2001	Philipp Harald Nagel	6474	4511

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EXAMINER

TRAN, DALENA

ART UNIT PAPER NUMBER

3661

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/037,303	Applicant(s) NAGEL, PHILIPP HARALD	
	Examiner Dalena Tran	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-13 and 17 is/are rejected.
- 7) ☒ Claim(s) 6-8, 14-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/21/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicant(s)

1. This office action is responsive to the amendment filed on 9/21/05. Claims 1-17 are pending.

The prior art submitted on 9/21/03 has been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 9-10, and 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Meek et al. (6,366,927) in view of Chojnacki et al. (6,366,851).

As per claims 1 and 9, Meek et al. disclose a vehicle navigation system that receives sensor data from a plurality of sensors, and provides a map image that is presented on a display, system comprising: a navigation map data memory that includes map data indicative of roadways stored geographic features that are other than straight form (see at least the abstract; columns 3-4, lines 20-57; columns 7-8, lines 21-58; figure 10; and column 9, lines 20-64), and a navigation processing unit that receives the sensor data, and requests map data from navigation map data memory associated with the sensor data, and computes the map image from map data (see columns 1-3, lines 13-4; and columns 3-4, lines 21-17). Meek et al. disclose roadways stored geographic features that are other-than-straight form, for example, Bezier curve. Bezier curve is a curve generated by a computable function, represented by polynomial equations.

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Meek et al. do not explicitly disclose a cornu spiral (clothoid) curve. However, cornu spiral is a curve also generated by a computable function, represented by polynomial equations, and there are other ways to represent other-than-straight road segments; some of these other ways to represent other-than-straight road include clothoid curve. To modify for the teach of Meek et al., Chojnacki et al. disclose other ways to represent other-than-straight road include clothoid curve (see columns 27-28, lines 44-23). Both Meek et al., and Chojnacki et al. disclose the advantage for storing roadway data to represent other-than-straight road segments is to increase the level of accuracy of the geographic database (see Meek et al., column 6, lines 20-30; and Chojnacki et al., column 27, lines 36-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teach of Meek et al. by combining geographic features that are other-than-straight form to include a cornu spiral form, for accurately store a different shapes curvature transition curves represent rivers or curve roads of geographic features, in order to provide a high level of accuracy in the geographic database.

As per claims 2 and 10, Chojnacki et al. disclose map data includes data indicative of a unit Cornu spiral (see at least columns 27-28, lines 44-22).

Claim 17, is method claim corresponding to system claims 1, and 9 above. Therefore, it is rejected for the same rationales set forth as above.

4. Claims 3-5, and 11-13, are rejected under 35 U.S.C.103(a) as being unpatentable over Meek et al. (6,366,927), and Chojnacki et al. (6,366,851) as applied to claim 2 above, and further in view of Gudat et al. (5,610,815).

As per claims 3-4 and 11-12, Meek et al., and Chojnacki et al. do not disclose Cornu spiral polynomial coefficients. However, Gudat et al. disclose navigation processing unit

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computes map image using Cornu spiral polynomial coefficients stored in navigation map data memory, and terms of polynomials of the unit Cornu spiral are stored in navigation map data memory and map image is computed using terms of polynomials of the unit Cornu spiral (see at least columns 10-11, lines 40-18; columns 31-32, lines 49-49; and columns 35-37, lines 54-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Meek et al., and Chojnacki et al. by combining computes map image using Cornu spiral polynomial coefficients stored in navigation map data memory, and terms of polynomials of the unit Cornu spiral are stored in navigation map data memory and map image is computed using terms of polynomials of the unit Cornu spiral for accurately determine a Cornu spiral form of roadways and provide an accurate map image.

Also as per claims 5 and 13, Gudat et al. disclose terms of polynomials are associated with Taylor series expressions indicative of Cornu spiral (see at least columns 33-34, lines 41-32).

5. Claims 6-8, and 14-16, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Remarks

6. Applicant's argument filed on 9/21/05 has been fully considered but they are not deemed to be persuasive.

Applicant's argue on page 6 of the amendment that the combination of Meek et al. ('927) and Chojnacki et al. ('851) is improper; and also, argument on page 7 that these references disclose using Bezier curves or spline curve functions in order to reduce the amount of memory

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required to store mapping database – not to provide a high degree of accuracy in the geographic database. However, the combination of Meek et al. and Chojnacki is proper, and the combining geographic features that are other-than-straight form to include a cornu spiral form, not only for reduce the amount of memory required to store, but also to provide a high level of accuracy in the geographic database as below.

(‘927) disclose in column 4, lines 44-57, the objective of the invention is to provide a method of representing and storing geographic feature information in such a way as to minimize the storage requirements while providing a high level of accuracy in the representation of other-than-straight features. Also, (‘927) disclose in abstract, lines 3-6, “for geographic features that are other-than-straight features, a curve generated by a computable function is fitted to an image of the other-than-straight features”, it would have been obvious that “a curve generated by a computable function is fitted to an image of the other-than-straight features” is suggest of a level of accuracy. (‘927) disclose “curving geographic features are represented using shape points” (column 3, lines 56-58), also, the shape points are stored, and where accuracy is important (see column 4, lines 7-17). Therefore, (‘927) system does disclose store geographic features that are other-than-straight form to provide a high level of accuracy.

(‘851) system also store the road segment other than straight by using shape point data (column 7, lines 27-31; and column 27, lines 44-63), try to minimize storage (column 8, lines 6-9), and to specify an accuracy level (see column 13, lines 8-53; column 15, lines 41-63; and column 27, lines 36-43).

Therefore, ('927) and ('851) are properly combine. Examiner maintains that all the references cited meet the language of the claims invention. Therefore, the rejection under 35 U.S.C.103(a) are considered to be proper.

7. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136 (a).

A shorten statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTHS shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136 (a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/dt

December 7, 2005


THOMAS G. BLACK
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